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Identifying and Preventing Disordered Eating Among Athletes:

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Perceptions of Track and Field Coaches

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Abstract

Objective: This study aimed to identify the strategies employed by coaches when identifying disordered eating (DE) among track and field athletes.

Method: Semi structured interviews were conducted with eleven track and field coaches, with experience of coaching at national and international level. The interviews were recorded, transcribed verbatim and an inductive thematic analysis was conducted.

Results: Track and field coaches reported using physical, social and performance indicators to identify disordered eating in their athletes. Coaches also monitored their athletes' eating attitudes and behaviors. Weight loss (both observed and objectively monitored) was considered to be a key indicator of disordered eating. Coaches placed a high level of importance on weight for performance, and an "ideal" female athlete body. Previous experiences of detecting disordered eating and a close relationship with the athlete facilitated the identification of disordered eating. Athlete secrecy and masking behaviors, difficulties in communication and coaches' stereotypical beliefs were found to complicate the identification process.

Conclusions: This study highlights the need for additional information, advice and guidance for track and field coaches to improve their knowledge and confidence in identifying disordered eating among their athletes.

Keywords: eating disorders, education, prevention, sport

Identifying and Preventing Disordered Eating Among Athletes:

Perceptions of Track and Field Coaches

Nearly 50% of athletes involved in sports that emphasize a lean body shape and low weight, such as track and field, have been reported to present with features of disordered eating (e.g., Byrne & McLean, 2002; Torstveit, Rosenvinge & Sundgot-Borgen, 2008). Personality, interpersonal and psychosocial attributes (including low self-esteem, self-critical perfectionism and associated mental health problems, such as depression), have been implicated as risk factors for disordered eating in both the general population (e.g., Arcelus, Haslam, Farrow & Meyer, 2013) and among athletes (Shanmugam, Jowett & Meyer, 2011). Elements of the sports environment can elevate body awareness and surveillance, notably the requirements to wear revealing sports attire (e.g., Greenleaf, 2004; Reel & Gill, 2001), the perceived value of weight for performance (e.g., Krentz & Warschburger, 2011; Martinsen, Bratland-Sanda, Eriksson, & Sundgot-Borgen, 2010) and the subsequent use of pathological weight loss practices (e.g., Dolan et al., 2011; Pettersson, Ekstrom, & Berg, 2012). Similarly, coach attitudes and behaviors, such as making critical comments regarding an athlete's weight (e.g., Kerr, Berman & De Souza, 2006; Muscat & Long, 2008); implementation of monitoring processes (e.g., Heffner, Ogles, Gold, Marsden & Johnson, 2003; McMahon & Dinan-Thompson, 2011); and a lack of supervision of weight loss strategies (Sundgot-Borgen, 1994) have been implicated in eliciting and exacerbating disordered eating in athletes.

Interpretive biographies, autoethnographical approaches, and life history analyses of athletes with eating disorders are a rich source of information of how coach attitudes, behaviors and comments can elicit eating problems in athletes (Jones, Glimtmeier & McKenzie, 2005; Papathomas & Lavalley, 2010; 2012a). For example, Jones and colleagues describe the experiences of 'Anne,' a swimmer whose eating disorder arose after her coach

suggested that she should lose weight to improve her performance. The account provides an insight into Anne's interpretation of, and reaction to the comment, indicating increased body dissatisfaction and shame at not meeting her coach's expectations; and acute disruption to her athletic identity; within an authoritarian coaching environment.

Coaches have an important role in identifying disordered eating behaviors and attitudes among their athletes, (Selby & Reel, 2011), which may be critical in preventing the onset of a clinical eating disorder (e.g., Neumark-Sztainer et al., 2006). Clinical eating disorders present with high mortality and morbidity (Arcelus, Mitchell, Wales & Nielsen, 2011), however, early treatment intervention is associated with a more favorable outcome (Zipfel, Lowe, Reas, Deter & Herzog, 2000). Early detection of eating disorders may be particularly valuable for athletes given the increased risk of injury that occurs with reduced energy availability and bone density (Pollock et al., 2010; Rauh, Nichols, & Barrack, 2010).

Research has attempted to quantify coach knowledge of the early signs of disordered eating in recognition of their role in the early identification of eating problems in athletes (e.g., Sherman, Thompson, Dehass & Wilfert, 2005; Turk, Prentice, Chappell & Shields; 1999). Most experienced coaches working in high risk sports appreciate the impact of disordered eating on health and performance, although one in five still report having never identified an athlete with an eating problem (Sherman et al., 2005). Moreover, coaches lack confidence in their knowledge of the early warning signs (Turk et al., 1999).

Qualitative research within this field has predominantly been conducted from the perspective of the athlete (e.g., Arthur-Cameselle & Baltzell; 2012; Jones et al., 2005; Papathomas & Lavalley 2010; 2012a) with limited research conducted from the perspective of the coach (Nowicka, Eli, Ng, Apitzsch, & Sundgot-Borgen, 2013; Sherman et al., 2005). There is a need to understand more fully athletes' experience of eating disorders (Papathomas

1 & Lavalley, 2012b). However, maintaining an exclusive focus on the individual may
2 perpetuate the poor reputation that has often been attributed to coaches, in relation to their
3 role in eliciting disordered eating in athletes (e.g., Jones et al., 2005; McMahon & Dinan-
4 Thompson, 2011). Previous research has suggested that coaches experience significant
5 difficulties with identifying the symptoms of disordered eating among athletes, often due to
6 the hidden nature of the disorder, and the tendency of athletes to deny the issue (Nowicka et
7 al., 2013; Sherman et al., 2005). However, the strategies coaches employ, their perceptions
8 of their relative success, and the challenges they encounter have yet to be considered within
9 the wider sporting context. In particular, there is a need to explore how coach actions may
10 contribute towards, or reduce elements of the sport environment that can promote disordered
11 eating (e.g., Busanich & McGannon, 2010; Waldron & Krane, 2005).

12 The current study takes a novel perspective on disordered eating in sport, by
13 considering the experiences of coaches in identifying eating problems in athletes. The
14 subculture of track and field was investigated, as heightened levels of disordered eating have
15 been reported within this population (Byrne & McLean, 2002; Torstveit et al., 2008).
16 Qualitative methods can be used to explore expressive information such as the beliefs, values,
17 feelings and motivations that underlie behavior, which are not as easily conveyed in
18 quantitative data (Smith, 2008). These beliefs can be then be interpreted within the sporting
19 context (Bhaskar, 1989). The following research questions were therefore explored using
20 qualitative methods: (a) How do coaches identify and determine the potential presence of an
21 eating disorder and how successful do they perceive these approaches to be? (b) What
22 obstacles and facilitators do coaches encounter when identifying disordered eating in athletes?
23 (c) How can coach experiences of identifying disordered eating in athletes inform us about
24 the potential influence of the sociocultural environment of track and field on the development
25 of eating problems in athletes?

Method

Participants

Eleven track and field coaches participated in the study. Ten of the coaches were male and one coach was female, and were aged between 44 and 69 years ($M = 56.40$, $SD = 6.85$). Years of coaching experience ranged from 6 to 45 years ($M = 23.60$, $SD = 12.01$), and participants spent between 4 and 14 hours a week coaching ($M = 9.82$, $SD = 4.50$). One coach held a United Kingdom Athletics Level 2 coaching qualification, 6 coaches held a Level 3 qualification and 4 coaches were qualified at Level 4.¹ Eight coaches had previously attended coach education sessions on disordered eating. Ten coaches coached distance running events (from 800m to marathon); one participant was a field event coach. The participants coached athletes of mixed abilities, but all of the coaches reported currently coaching athletes at either national ($n = 5$) or international level ($n = 6$). Two coaches exclusively coached female athletes. All of the coaches reported encountering disordered eating in athletes during their time coaching.

Procedure

The study received clearance from the institution's Ethical Advisory Committee. Coaches were recruited through adverts about the study to UK athletics clubs. Inclusion criteria specified having coached an athlete with disordered eating and to be currently coaching (minimum of one hour per week). Coaches with prior experience of disordered eating in athletes were recruited to ensure that they could provide reflective personal experiences regarding identification. Most of the interviews were conducted on the telephone ($n = 10$), facilitating the participation of a geographically dispersed sample. One participant

¹ Level 2 coaches are qualified to coach independently across all running, jumping and throwing disciplines within athletics. Level 3 coaches have shown some specialisation in terms of the coaching they do, such as specialising within running, jumping or throwing. Level 4 coaches have specialised yet further and are classified as specialist coaches for particular events, such as 800m and 1500m.

1 was interviewed in person due to their convenient location. An absence of visual cues for
2 telephone interviewing may result in a loss of nonverbal data and thus compromise rapport
3 (Aquilino, 1994); however evidence has suggested that the number, nature, and depth of
4 responses do not differ across interview modality (Sturges & Hanrahan, 2004). Telephone
5 interviewing also permits greater anonymity than face-to-face interviews, which may be
6 particularly salient when discussing potentially sensitive topics, such as this.

7 A semi structured interview schedule was developed in consultation with experts from
8 both the eating disorder and sport fields. Coaches were asked to describe their experiences
9 with athletes with disordered eating.² Following informed consent, the interviews were
10 conducted by the same researcher, appropriately trained in interview techniques. The
11 interviews lasted between 43 and 69 minutes (mean = 53.82 minutes) and were transcribed
12 verbatim, ranging from 5,644 - 11,467 words (mean = 8,261 words).

13 I (the first author and interviewer) completed a diary after each interview to facilitate
14 reflection and to acknowledge my emotional responses to the information disclosed. The
15 diary was referred to during the analysis, as it contained preliminary thoughts on the salient
16 issues raised within the interviews. Some examples are provided within the results. As a
17 current athlete competing at international level over 800m, I possessed good contextual
18 knowledge and understanding of the terminology commonly used by track and field coaches.
19 This knowledge facilitated the development of good rapport with the participants, by not
20 having to ask for additional clarification about topics such as competition, and enabling
21 dialogue about current events within track and field. It is acknowledged that being a current
22 high level performer within track and field may have had an impact on the researcher–
23 participant rapport, which may not have occurred if the interviews had been conducted by a
24 researcher from outside of the sporting environment. Insider research, however, can offer a

² The interview schedule is available from the first author on request.

unique perspective on the sports cultural environment that other researchers are not able to access (Douglas & Carless, 2012). Participants may be more willing to share their experiences due to an assumption of understanding and shared knowledge, potentially leading to a greater depth of data gathered (Corbin Dwyer & Buckle, 2009).

Data Analysis

It is necessary to state the epistemological and philosophical position of the researcher to identify and acknowledge their potential influence on the research process (Willig, 2013). It is also important in determining and justifying the choice of methods chosen, the analytical strategy and the interpretation of the findings (Hignett, 2005). A critical realist perspective was adopted; a position which combines transcendental realism and critical naturalism (Bhaskar, 1989). Critical realism allows us to acquire an insight into coach experiences of disordered eating in athletes through their accounts, but also to locate these experiences within the broader subculture of track and field (Bhaskar, 1989). An inductive thematic analysis was selected as an accessible and flexible method. Themes are not restricted by a pre-existing coding framework, and are closely linked to the data. The data can be richly described and critically interpreted (Braun & Clarke, 2006).

The analysis followed the six-stage process as outlined by Braun and Clarke (2006). Stage one involved familiarization and immersion in the data; this was achieved through the manual transcription of the interviews and multiple readings of the data. Familiarization allowed the researcher to develop an awareness of the depth and diversity of the data, and to begin the more formal process of conceptualization (Ritchie & Spencer, 2002; Smith & Caddick, 2012). The preliminary thoughts about the data from the reflective diary were reviewed and served to guide the early stages of the analysis. The transcribed data was transferred into NVivo 9 (QSR International, 2010). The qualitative data analysis software

Discussions took place within the research team during analysis to facilitate reflection on, and exploration of, alternative explanations and interpretations of the data (Smith, 2008). A second experienced qualitative researcher independently coded a sample of the data to stimulate discussion of the generated codes and themes yet further. Extensive disparity in interpretation would have been reflected upon by the first author, who had a unique insider's perspective and therefore high sensitivity for relevant themes that emerged. In this case, however, subsequent discussions revealed no major disagreements between the two researchers. It is acknowledged that there are alternative methods to ensure the trustworthiness of the data analysis and interpretation (Sparkes & Smith, 2009; Whittemore, Chase & Mandle, 2001), however the process employed here has been widely used and recommended for inductive thematic analysis (Yardley, 2008).

Results and Discussion

The results and discussion are presented concurrently, according to the three themes derived from the analysis. The first section presents the methods used by coaches to identify disordered eating in their athletes; the second and third sections present the barriers and facilitators perceived by coaches when identifying disordered eating in athletes.

1 **(1) Methods of Identification**

2 Coaches described identifying disordered eating in their athletes through observing
3 changes in four main areas. There was a focus on *physical indicators*, but *eating attitudes and*
4 *behaviors, social, and performance indicators* were also salient subthemes.

5 **Physical indicators.** All of the coaches in the study relied on physical indicators to
6 determine the presence of disordered eating. Weight loss was considered to be a key feature
7 of eating problems, although differences existed in the strategies utilised to detect weight loss,
8 and in coach beliefs about when to monitor weight. A minority of coaches ($n = 4$) endorsed
9 regular weight monitoring of their athletes, and described using objective measures of weight
10 and body composition as a tool to identify the early stages of disordered eating.

11 For athletes who are in heavy training, for me it's important to know where their body
12 composition is going, because it's very easy to get out of kilter with that. You're
13 looking leaner because you're training hard...it's very easy to miss the fact that they're
14 not putting enough nutrition in (62 year-old male endurance coach)

15 Most coaches, however, expressed concern over the impact of weight monitoring,
16 preferring to only introduce objective measures of weight and body composition after having
17 observed physical changes in the athlete. Specific thresholds for body composition and
18 skinfold analysis were utilised to help the coach determine if weight loss was problematic. A
19 56 year-old male endurance coach stated, "In a male athlete I'm looking for body fat
20 percentages between seven and eleven per cent. Anything less than seven flags up that there
21 may be an issue. In a female, anything less than fifteen per cent is an issue". Such criteria
22 were not necessarily based on evidence, but on coaching experience. "That's my observation,
23 you know, the people who do the skinfolds, they have a very woolly statement about it's all
24 individual and you've got to find out what suits you" (53 year-old male endurance coach).

1 The remaining coaches ($n = 4$) perceived a close association between observed weight
2 loss and the presence of disordered eating, relying primarily on identifying weight loss
3 through observation. This approach often required a close attention to detail: “I keep an eye
4 on her very closely; because there are sort of tell-tale signs in terms of the sort of fine hair
5 and also her shorts start to get baggy and things like that” (56 year-old male endurance coach).

6 Weight monitoring strategies are commonplace within the sports environment
7 (Heffner et al., 2003; Kerr et al., 2006), however athletes commonly identify such practices
8 as a trigger for increased body surveillance and disordered eating behavior (Cosh, Crabb,
9 LeCouteur, & Kettler, 2012; McMahon & Penney, 2012). The coach participants recognized
10 the potential impact of weight monitoring on athletes, yet reported such strategies were
11 necessary for detecting disordered eating. Weight loss can be indicative of food restriction
12 and potentially anorexia nervosa (American Psychiatric Association; 2000), however it is not
13 always a key feature of bulimic-type eating problems where the emphasis is on bingeing and
14 purging and low weight is atypical (Wilson, Fairburn & Agras, 1997). It is plausible to
15 suggest that coaches reliant on identifying weight loss may be overlooking cases where this is
16 not a salient feature, despite an increased prevalence of bulimia nervosa and eating disorders
17 not-otherwise-specified (EDNOS) among athletes compared to anorexic-type eating problems
18 (Sundgot-Borgen & Torstveit, 2004).

19 Menstrual dysfunction was noted as a physical indicator of disordered eating among
20 female athletes by nearly half of the coaches ($n = 5$). Male coaches described substantial
21 difficulties in discussing menstrual function with adolescent female athletes. Information
22 about an athlete’s menstrual status was occasionally sought from parents to avoid an
23 uncomfortable conversation with the athlete, or reported in the athlete’s training diary that the
24 coach could occasionally check. One 44 year-old male endurance coach expressed particular

1 reluctance to be involved in assessing athlete menstrual function, perceiving this to be the
2 responsibility of the athlete and their general practitioner:

3 I've spoken to all of them, sort of the better girls in my group that they should go and
4 see their doctor about when their menstrual cycles are and all of those type of
5 things... I don't really want to get that involved with the nitty gritty of it all. They've
6 got doctors who can advise them.

7 The discomfort that coaches experienced in discussing menstrual function was noted
8 by the researcher in the reflective diary, after an interview with a 57 year-old male endurance
9 coach. "Conversations about menstrual function caused significant discomfort. Expressed
10 preference to refer athletes to alternative resources, rather than initiate a potentially awkward
11 conversation - suggests a lack of confidence and potentially knowledge?" These findings
12 provide an insight into perceptions of the female body within the subculture of track and field.
13 Taboos around menstruation and issues identified as "female specific" by coaches (e.g.
14 "those type of things") continue to exist (Kissling, 1999). The above quote indicates a limited
15 interest in addressing any problems (e.g., "nitty gritty") as well as a silencing of, or deflection
16 of problems away from the track and field environment (e.g., "They've got doctors who can
17 advise them.") It was also only deemed important to impart this information to successful
18 athletes (e.g., "the better girls in my group"). Other coaches suggested the discomfort in
19 discussing these issues was primarily on the part of the athlete: "Some are more open and
20 want to talk about those sorts of issues, and then others aren't so [open]" (53 year-old male
21 endurance coach). These findings suggest that communication taboos about menstruation are
22 still pervasive within the subculture of track and field (Kissling, 1999).

23 **Eating attitudes and behavioral indicators.** Just over half of the coaches ($n = 6$)
24 identified changes to eating attitudes and behaviors as markers of disordered eating. Coaches

1 referred to athlete restriction of food intake, engaging in unusual eating practices and rituals,
2 and purging behaviors such as self-induced vomiting, laxative abuse, or excessive exercise.
3 Where weight loss had been noted, changes to eating behavior served to verify suspicions of
4 an eating problem, as described by a 57 year-old, male endurance coach:

5 She's sort of said things at the restaurant like, to the waiter, oh I don't feel very
6 hungry, is it possible to have something off the child's menu, and then has had
7 something off the child's menu and not eaten it. In my view she was substantially
8 underweight, and anecdotally, I'd heard that she had eating issues.

9 One coach reported being aware of purging at the training site, however purging
10 behaviors were most commonly reported to coaches by peers or parents. It is possible that the
11 detection of bulimic-type symptoms is a particular challenge for coaches, perhaps as a result
12 of their focus on identifying weight loss and changes to physical appearance, which is not a
13 key feature of bulimic-type eating disorders (Wilson et al., 1997).

14 I noticed that when we did a warm up, she would disappear. I was always concerned
15 about that, suddenly I'd notice that she wasn't with the group... she didn't say, but she
16 didn't deny that when she disappeared it was to make herself sick...before a big race
17 because she thought that would help her. (69 year-old male endurance coach)

18 The coaches often attributed changes to an athlete's eating behavior to a desire for
19 performance improvement. In some cases, performance improvement was perceived as the
20 only rational explanation for disturbed eating practices. "You've got to try and sort of
21 persuade them that actually, it comes a point when being light is not performance enhancing"
22 (57 year-old male endurance coach). The findings indicate underlying coach expectations of
23 athletes to do everything they can to improve their performance, and adapting their body is an
24 appropriate method by which to do so. Dieting for performance reasons is deemed acceptable

1 within the sporting context (Cosh et al., 2012; McMahon & Penney, 2012) and pressure to
2 diet is commonly reported among athletes (Martinsen et al., 2010; Sundgot-Borgen, 1994).
3 Moreover, a desire to be leaner for performance has been found to mediate the relationship
4 between sports specific pressures and disordered eating (Krentz & Warschburger, 2011).

5 **Social indicators.** Coaches reported seeking help from parents of adolescent athletes
6 to evaluate their eating behavior, “I suppose a lot of the feedback we got wasn’t directly from
7 her but from her mother” (63 year-old female endurance coach). Two coaches employed
8 more elaborate strategies; by asking peers to report back about an athlete’s eating behavior.
9 Some of the coaches were hasty to assume the absence of an eating problem where normal
10 eating behaviors were reported. These findings suggest coaches were unwilling to engage
11 with the possibility of an eating problem. One 57 year-old male endurance coach stated:

12 I actually said to the other girl, hey you know I really don’t like doing this but can you
13 just...she’s saying she’s brought stuff that she is going to eat, she’s saying she’s going
14 to eat it. Tomorrow at breakfast, I’ll sort of say, did she actually eat when you got
15 back to the room last night, and can you keep an eye open and just let me know if she
16 does. And apparently she did do, so the situation wasn’t as bad as I feared it might be.

17 Just one coach made reference to social withdrawal as indicative of disordered eating;
18 two coaches noted the link between stressful life events and the onset of an eating problem.
19 Mood disturbances were not identified as possible symptoms, despite high levels of coaching
20 experience within the sample. The findings suggest a lack of awareness of the emotional
21 state of athletes, and a lack of knowledge of the association between poor mental health and
22 eating problems (Shanmugam, Jowett & Meyer, 2012). It is plausible that coaches perceive
23 their role as primarily for physical training and performance improvement (Denison, 2007);
24 beliefs that may be mutually reinforced by athletes, with few expectations for coaches to act

as a source of emotional support (Wolfenden & Holt, 2005). In order for athletes to feel valued, and a part of the sports environment in which they compete and socialise, it is important for coaches to support their athletes without attached performance contingencies (Reinboth, Duda & Ntoumanis, 2004). Similarly, a controlled coaching environment with few opportunities for athlete autonomy can negatively impact on athlete wellbeing (Felton & Jowett, 2013) and could increase their risk for disordered eating (Shanmugam et al., 2012).

Performance indicators. A drop in performance, a failure to make progress in training, and recurrent injuries often prompted concern over an athlete's eating behavior, as one 58 year-old, male field events coach disclosed:

It became clear that she wasn't making any progress and she was actually going backwards. I got concerned about it, spoke to her mother and then discovered that there were issues with eating and refusing to eat and things like this.

Over half of the coaches ($n = 6$) noted that performance in fact improved in the early stages of weight loss and that it was only later that performance started to falter: "She got to schools international level, and that was one of the problems in that because, you know, in the initial stages of losing weight, it enhanced her performance" (69 year-old male endurance coach). In some cases, coaches identified initial weight loss as appropriate for performance improvement, highlighting the importance assigned to weight for performance, in addition to an increased threshold for concern over weight loss where performance motives existed.

Coaches were motivated to intervene over an eating problem where athlete performance was reduced, although expressed greater reluctance when performance was improving. This finding indicates a tendency towards a performance-centred as opposed to a person-centred coaching style, with limited consideration for the athlete's health and psychological wellbeing (Biesecker & Martz, 1999). The athlete's body is perceived as a

“machine”, where performance is improved via appropriate training (Johns & Johns, 2000). The responsibility for adapting their body for performance improvement is clearly located with the athlete, as expressed by a 57 year-old male endurance coach. “She’s just identified a weight that she wants to hit, which she actually thinks will be the most beneficial racing weight for her”. A performance-centred, authoritarian coaching environment has been identified as a trigger for disordered eating behavior (McMahon & Dinan-Thompson, 2011).

(2) Barriers to Successful Identification of Disordered Eating in Athletes

Three main barriers to the successful identification of disordered eating were identified by the coaches; *coach difficulties*, *athlete denial* and *communication*.

Coach difficulties. Having limited contact with athletes and being a male coach coaching female athletes were factors that complicated the identification of eating problems. Coaches also cited difficulties in distinguishing between athletes whose appearance met their sport-type expectations, such as a lean distance runner, from those with a potential eating problem. Some of the coaches expressed stereotypical expectations about the appearance of someone with an eating disorder; “She’s a chunky girl, well-muscled. So she doesn’t actually look particularly anorexic you know; in the classic sense. She hasn’t got stick thin limbs or anything like that” (56 year-old male endurance coach).

It was clear that coaches expected athletes with eating disorders to have a noticeably low weight appearance; beliefs that were also exposed via their primary focus on detecting weight loss. This issue was also raised in the researcher’s reflective diary. For example, after an interview with a 57 year-old male endurance coach, it was noted: “This coach was easily convinced of the absence of an eating problem, through a lack of noticeable weight loss and no changes to performance. Raises questions about expectations for an ‘eating disordered’ athlete – is low weight critical?” The use of words such as “chunky” imply that the athlete

1 was of an atypical appearance, raising concerns about the comparisons that coaches make
2 between athletes, and their point of reference. It would appear that a lean and slender
3 physique is considered “ideal”. Such perceptions and beliefs could foster an unhealthy
4 training environment if they are made transparent to athletes (Engel et al., 2003). This
5 particular coach’s choice of language in describing the athlete’s appearance as “chunky”
6 suggests a significant lack of awareness of the potential impact of their comments on an
7 athlete’s body esteem and feelings of self-worth. Although weight-related comments by
8 coaches are unlikely to be ill-intentioned, they can increase body awareness and feelings of
9 dissatisfaction, and potentially trigger disordered eating in athletes (Jones et al., 2005;
10 McMahon & Dinan-Thompson 2011). Weight-related comments from coaches can have long
11 lasting effects even after athletes have retired (Jones et al., 2005; McMahon & Penney 2012).

12 **Athlete denial.** Several coaches reported difficulties in identifying disordered eating
13 due to the efforts made by athletes to conceal the signs and symptoms. Coaches referred to
14 athletes hiding food, wearing baggy clothes, and being untruthful about their eating behaviors.

15 Very very devious, ‘cos you’ve got to think at that time it was quite cold, so she was
16 wearing tracksuits and loads of gear, so you couldn’t see it. She was hiding what she
17 wasn’t eating from her parents, she was masking things, you know. They found out
18 when Weetabix fell out from under her armpit (56 year-old male endurance coach).

19 Coaches often described a deterioration in their relationship with the athlete when
20 they suspected disordered eating, marked by significant distrust (e.g., “devious”). Secrecy
21 and concealment are common features of eating disorder presentation (Vandereycken & Van
22 Humbeeck, 2008); and difficulties in disclosing an eating problem extend to the athletic
23 population (Papathomas & Lavalley, 2010). Conveying to coaches their role in facilitating the

disclosure of eating problems among athletes (Selby & Reel, 2011) could help to motivate them to preserve communication channels when an eating problem is suspected.

Communication. Coaches reported difficulties in discussing food, weight and menstrual function with their athletes. None of the coaches deemed these conversations to be straightforward, but particular difficulties were reported by older, male coaches working with adolescent, female athletes. Coaches suggested these difficulties were primarily due to an unwillingness of athletes to engage in such conversations, although one 54 year-old male endurance coach acknowledged that his own communication skills needed improving.

There's always a little bit of a communication issue from a male coach to a female athlete. I'm fortunate in that I have an assistant who is a female coach, so I've got back up there. I think that message comes across better woman to woman as opposed to man to woman, maybe it's a bit me in terms of communication...I can probably put my hand up here and say maybe that's an issue I have to learn to deal with rather better.

Coaches expressed concern about potentially exacerbating disordered eating, particularly where they lacked certainty in the presence of an eating problem. Some coaches preferred to avoid the issue rather than risk aggravating the situation, suggesting a lack of confidence in their ability to appropriately tackle disordered eating among their athletes.

It can be very specific and individual and you don't know whether you're saying something which can be disastrous or really hurt someone, because it is something that is difficult to be aware of I think (69 year-old male endurance coach).

Coaches tend to locate the barriers to identifying disordered eating primarily with the athletes themselves, in terms of a failure to disclose, a lack of openness about eating behaviors, and resistance to discussions about food, weight and shape. Few coaches

considered their own coaching practice as a potential barrier to identifying disordered eating. Disciplinary processes such as training regimes, body surveillance and monitoring processes within the sporting context can produce disciplined, obedient and docile athletes. As a consequence, athletes may feel unable to disclose any issues or problems (e.g., Denison, 2007, Foucault, 1991; McMahon, Penney & Dinan-Thompson, 2012).

(3) Facilitators for Identifying Disordered Eating in Athletes

Three main sub-themes were identified that assisted coaches in identifying disordered eating, including the *coach-athlete relationship*, *support from others* and *experience*.

Coach-athlete relationship. An open and trusting coach-athlete relationship assisted coaches in approaching athletes about their concerns and in assessing potential eating problems. Just over half of the coaches ($n = 6$) felt able to confront athletes about their concerns in a confidential one-to-one setting.

I think most of the athletes that I coach properly, when you're meeting up every month on a one-to-one, and you're seeing them almost every day, you get to know them well enough that you hope that in most cases they get to a point where they can chat about it (53 year-old male endurance coach).

Communication is an important component of a successful coach-athlete relationship, (Jowett & Ntoumanis, 2004), enabling the development of shared goals and allowing coaches to react sensitively to individual athletes' needs (Jowett & Cockerill, 2003). Communication is a principal method through which emotional well-being can be assessed; an area which has been relatively neglected by coaches in this study in comparison to the physical health and performances of athletes. Importantly, a poor quality coach-athlete relationship, characterised by high levels of conflict and low levels of support has been linked to increased levels of athlete eating psychopathology (Shanmugam, Jowett & Meyer, 2013). The findings described

here imply in some cases there is a limited provision of emotional support from coaches, with tendencies towards performance-centred coaching styles. This approach could increase body dissatisfaction by reinforcing perceptions of the athlete body as something malleable to be altered for performance gains (McMahon & Dinan-Thompson, 2011).

Support from others. Many of the coaches sought additional information from the athlete's peers, parents and nutrition and sports science experts to determine the presence of an eating problem, and to secure support for raising the issue with the athlete. "In my view there is a definite partnership between coach, parent and athlete. It's important I think to involve all three parties in these types of discussions, so the parents have got an awareness as well" (49 year-old male endurance coach). In line with previous findings, the coaches in this study clearly lack confidence in their knowledge and ability to address disordered eating in athletes (Nowicka et al., 2013; Turk et al., 1999). These findings could indicate a low level of engagement with, and dissemination of, coach education on disordered eating within track and field in the UK. For example, one 62 year old male endurance coach endorsed seeking support from various people when approaching an athlete about an eating problem:

I think you've got to use absolutely everything now, because I think once people get into this loop, it's extremely difficult to get out, so you've got to use their family, their friends, their school friends if you know them, their running friends...

Experience. Just under half of the coaches ($n = 5$) reported that prior experience of coaching an athlete with disordered eating was influential in determining their knowledge of the early warning signs and confidence in being able to identify disordered eating among their current group of athletes. A 54 year-old male endurance coach said:

We're much more confident [about identifying disordered eating] compared to three years ago. The experience of it sort of brings you down to earth and makes you realize

Coaches also referred to an enhanced vigilance for disordered eating symptoms, acknowledging their role in preventing such problems. “With my past experience, I’d hate to think that one of my athletes that I coached went through such a disorder and suffered as a result in terms of their career” (49 year-old male endurance coach). The findings indicate that experiencing disordered eating among athletes can improve coach confidence for future identification of similar issues. Even among elite coaches, not knowing how to approach an athlete or where to seek support from are significant barriers to intervention (Nowicka et al., 2013). In practical terms, these findings highlight the value of sharing experiences among coaches and for increased coach education provision to improve confidence among coaches in identifying eating problems (Kerr et al., 2006; Nowicka et al., 2013).

An inductive thematic analysis, adopting a critical realist perspective was conducted on interviews from eleven track and field coaches to explore the strategies used to identify disordered eating among athletes. Three main themes were identified: *methods of identification*, *facilitators* and *barriers* to successful identification of disordered eating.

The coaches within this study adopted strategies for identification that contradicted their motivation for prevention. For example, monitoring weight despite accepting the possible impact of these strategies on athletes; increased thresholds for concern over weight loss when it was deemed appropriate for performance, and not taking action when an eating problem was suspected for fear of exacerbating the situation. These contradictions could potentially be due to the importance that coaches placed on weight for performance, and the “ideal” female athlete body, whilst simultaneously recognizing a need to prevent disordered

1 eating. Beliefs about the link between weight and performance have little empirical support
2 (e.g., Sherman, Thompson & Rose, 1996) yet manifest strongly within sports environments,
3 as “taken-for-granted truths” about the female athlete body (Busanich & McGannon, 2010).
4 Athletes are likely to pick up on, and potentially adopt coach beliefs about the link between
5 weight and performance (Engel et al. 2003). These influential cultural discourses are also
6 reflected in the allusions towards menstrual function as abnormal and unwanted among
7 female track and field athletes and the lack of communication that exists between coaches
8 and athletes,

9 The majority of the coaches adopted a primarily disciplinary approach to coaching
10 (Denison, 2007; Foucault, 1991), through processes such as body monitoring, characterizing
11 athletes with disordered eating as untrustworthy and locating difficulties in identifying eating
12 problems with athletes themselves. The majority of coaches perceived their role to be
13 primarily focused on physical training and to improve athletic performance, with limited
14 recognition of and communication about the psychological wellbeing of athletes. This
15 coaching style can lead to docile and unmotivated athletes (Denison, 2007) and potentially
16 have a long term effect on athletes’ relationship with food (McMahon et al., 2012).

17 In addition to education for athletes, this study supports the provision of
18 comprehensive coach education to track and field coaches.³ In particular, there is a need to
19 address current coach beliefs about the importance of weight for performance, the “ideal”
20 female athlete body, and the primary focus on weight loss as a marker of disordered eating.
21 Examples of case studies of athletes that breach any “taken-for-granted-truths” may
22 encourage coaches to consider an alternative perspective. Coaches may need support to
23 recognize the impact of different coaching styles and should be encouraged to view their role
24 as going beyond physical training. Workshops could include sessions on establishing

³ Please see the supplementary material for an overview of the coach education components.

1 successful discussion with athletes on topics such as food, weight and shape, and provide
2 training on how to approach an athlete with a suspected eating problem. Coaches may then be
3 more willing to be “first responders” (Selby & Reel, 2011) to eating problems in athletes.

4 The inclusion of a diverse group of coaches with varying levels of expertise and
5 working with athletes of various ages and levels was not considered to be problematic given
6 the novelty of this research. Further research may consider narrowing the focus to particular
7 coach groups, notably elite level coaches, university coaches and club coaches working with
8 young athletes. This would support the development of targeted coach education, particularly
9 for those working with adolescent athletes.

10 The coaches in this study were predominantly middle-aged, male and had substantial
11 coaching experience. The sample was considered an accurate reflection of UK coaches,
12 where the majority of qualified coaches are male (Sports Coach UK, 2011). It is possible that
13 the strategies for identifying disordered eating behaviors as outlined within this study are
14 only true of experienced coaches. Eight of the eleven coaches had previously received some
15 coach education on disordered eating; additional research with less experienced coaches
16 would be useful. This study is innovative in that it explores the identification of disordered
17 eating sport from the perspective of the coach, and can make recommendations for coach and
18 athlete education. This may help to prevent the future development of clinical eating
19 disorders in athletes.

1 Table 1

2 *Recommendations for Coach Education on Disordered Eating in Athletes*

Components for comprehensive coach education on disordered eating

Address the current focus on weight loss as a primary indicator of disordered eating

- Additional education about other forms of eating disorders, such as bulimia nervosa and EDNOS, and their relative prevalence in athletes.
- Provide information on alternative signs and symptoms of disordered eating and co-morbid conditions, to improve coach confidence for identifying eating problems.

Dispel stereotypical sport and eating disorder beliefs; for example, the relationship between weight and performance, the “ideal” female athlete body, and taboos about menstrual function.

- Provide examples of successful athletes who contradict these stereotypical beliefs
- Educate coaches about the sports environment and culture, and the influence of their own beliefs on the attitudes and behaviors of athletes.

Improve coach confidence in their ability to communicate successfully with athletes; particularly with regards to topics such as nutrition, weight and disordered eating.

- Training on how to approach athletes where disordered eating is suspected
 - Emphasise the importance of the coach in the identification process and highlight some of the difficulties experienced by athletes in disclosing such issues.
 - Reinforce the need to build and develop a trusting coach-athlete relationship to support successful communication.
 - Coaches with experience of identifying affected athletes should be encouraged to share their experiences with the wider coaching community.
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3

4

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